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**Notice of Allowability**

<b>Application No.</b>	<b>Applicant(s)</b>	
10/620,251	GOYAL, AMIT	
<b>Examiner</b>	Art Unit	
Stephen J Stein	1775	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

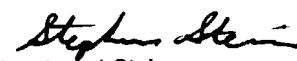
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to Applicant's Application filed July, 14, 2003.
  2.  The allowed claim(s) is/are 1-41.
  3.  The drawings filed on 14 July 2003 are accepted by the Examiner.
  4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a)  All b)  Some\* c)  None of the:
      1.  Certified copies of the priority documents have been received.
      2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
- Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**
5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
    - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
  7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date July 14, 2003
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.



Stephen J Stein  
Primary Examiner  
Art Unit: 1775

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 1-41 are allowed over the prior art of record.

### *Reasons for Allowance*

2. The following is an examiner's statement of reasons for allowance:

None of the prior art of record teaches or suggests an article or method of preparing an article comprising a textured metallic substrate having a rotated cube texture wherein a (100) cube face thereof is parallel to a surface of the article, and wherein a (100) direction thereof is at an angle of at least 10° relative to a rolling direction thereof, said substrate having thereon at least one epitaxial layer of another material.

Further, none of the prior art of record teach or suggest an article comprising a biaxially textured metallic substrate having a microstructure characterized by a (100) <100> crystalline structure orientation which is at an angle of at least 10° relative to an ideal cube texture orientation of (100) <100>, said substrate having thereon at least one epitaxial layer of another material.

Finally, none of the prior art teaches or suggests an article comprising a textured metallic substrate having a rotated cube texture, wherein the substrate further has a brick-floor microstructure, and at least one epitaxial layer of another material formed thereon. Applicant defines the limitation "brick-floor" microstructure to mean a surface of the tape has aspected (elongated) grains having an aspect ratios of at least 10 in the plane of the substrate and having at least one crystallographic direction in the grains aligned. The aspect ratio is

defined as the ratio of the length of the grain divided by the width of the grain in the plane of the substrate.

The following is a summary of the closest prior art of record.

US Patent 5,958,599 (and related patents US 5,898,020, US 5,741,377, US 5,739,086) and US 6,106,615 (and related US Patent 5,964,966) all teach a biaxially textured alloy article comprising a rolled and annealed biaxially textured metal substrate with an epitaxial layer thereon, wherein the metal has a face-centered cubic structure (cube texture), and wherein the cube plane lies parallel to the plane of the sheet with a cube edge is parallel to the rolling direction, i.e., (100) [001] (See US Patent 5,958,599, col. 13, lines 15-37 and col. 6, lines 33-37). These references and the prior art of record provide no teaching or suggestion that the (100) direction of the textured surface thereof is or should be at an angle of at least 10° relative to its rolling direction.

Other prior art of record, such as US 6,451,450 (and related US Patents 6,235,402, and 6,077,344) teach a biaxially textured nickel-chromium alloy substrate having a well developed single orientation (100) <100> cube texture with the out of plane texture of the substrate 4.7 ° in the rolling direction and 8.3° about the rolling direction (See US 6,451,450, col. 6, lines 35-43). These references and the prior art of record taken as whole fail to provide any teaching or suggestion for the (100) <100> crystalline structure orientation at an angle of at least 10° relative to an ideal cube texture orientation of (100) <100>. The limitation “an ideal cube texture orientation” as defined by applicant in the disclosure is interpreted to mean a substrate wherein the (100) planes of all the grains are perfectly parallel to the tape surface and the (100) directions

of all the grains are perfectly aligned along the length of a tape or a (100) direction being aligned with the rolling direction.

Still other prior art of record, such as US Patent 5,739,086, teach a biaxially textured article includes a rolled and annealed biaxially textured substrate of metal having a face-centered cubic structure; and an epitaxial superconductor or other device epitaxially deposited thereon and further teaches that grain size is grown to a size of 10 to 100 times the sheet thickness during annealing in suitable atmospheres (See abstract and col. 10, lines 39-60). The reference fails or suggest a "brick floor microstructure" or an elongated grains with an aspect ratio (length of the grain divided by the width of the grain) of at least 10 in the plane of the substrate and having at least one crystallographic direction in the grains aligned.

The prior art of record taken as whole fails to teach or suggest the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

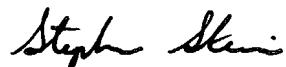
### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 572-272-1544. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the

Art Unit: 1775

attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 572-272-1535. The official fax number is 703-872-9306.

February 1, 2004



Stephen J. Stein  
Primary Examiner  
Art Unit 1775